

RO-1-VW-NOTE VIBRATING WIRE NOTE - VVNOTE

Datasheet RO-1-VW-NOTE



Description

The VVnote is a handheld readout unit and datalogger which reads most commercially available geotechnical Vibrating Wire (VW) sensors and built-in thermistor temperature sensors. Readings are stored in its internal memory for transfer to a PC via a USB pen drive.

With a default wide sweeping range of 450-6000 Hz, together with the ability to display and save results in engineering units as well as raw readings, the VVnote is very versatile.

The VVnote uses an FFT-based reading algorithm which makes it more immune to the common interferences associated with VW sensor readings.

The VVnote need never be connected to a PC; a USB pen drive is used to transfer the configuration file as well as saved readings between the VVnote and a PC. The internal memory card can store over 6 million sets of readings and the configuration parameters of several thousands of sensors.

Features

- Portable and rugged
- Compatible with nearly all VW sensors
- Realtime display of VW sensor readings in engineering units as well as in Hz, Hz²/1000 and period
- FFT-based data reading algorithm
- Reads with the default full sweep frequency range (450-6000Hz) or any user definable range
- Reading and displaying parameters can be fully configured for each sensor
- Large data storage (2GB) and easy data retrieval via a USB pen drive
- Firmware upgradable via USB pen drive by the user; no need for a PC
- Long battery life; powered by a NiMH rechargeable battery
- User selectable display backlight; auto shutdown

Benefits

- Easy to carry and operate in all site conditions
- Readings are accurate, repeatable and interference free
- Taking readings is simple, fast and error free
- Optional higher 15V excitation ensures quality readings for sensors with long cables
- Site and sensor IDs facilitate management of VW sensors from one site or multiple sites
- Saving readings in date groups and a large internal memory minimises data loss
- Readings recorded and displayed in raw and engineering units, together with reading quality indices and optional waveform data ensures quality readings
- No site PC required to set up or download data; nor do users need to be computer literate to use VVnote



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If you would like to speak with someone directly please call +44 (0)1825 765044 or email sales@soil.co.uk

Operation

The operation of VWnote is driven by the onboard menu. The main menu gives access to all VWnote functions, including:

- **READ** - take a reading of the VW sensor currently connected to VWnote
- **SETUP** - add sensors to the list of sensors or edit the sensors reading, displaying parameters and calibration factors
- **DATA TO USB** - transfer data stored in VWnote internal memory to a USB pen drive
- **DATE/TIME** - display and change the date and time of the realtime clock in VWnote
- **CFG EXPORT** - copy the sensor list and configuration in VWnote to a USB pen drive
- **CFG IMPORT** - copy a new sensor configuration file from a USB pen drive to VWnote
- **INFO** - display information in VWnote, including serial number, firmware version, date, time, battery voltage and storage status.

All that is required is to switch on, connect a sensor or plug in a pen drive and follow the menu.

Applications

The VWnote can be used to read Vibrating Wire sensors for geotechnical and structural monitoring.

Typical applications include:

- Pore pressure monitoring
- Water level monitoring
- Strain monitoring
- Displacement monitoring
- Crack monitoring
- Load monitoring
- Pressure cell monitoring

Associated products

For details on:

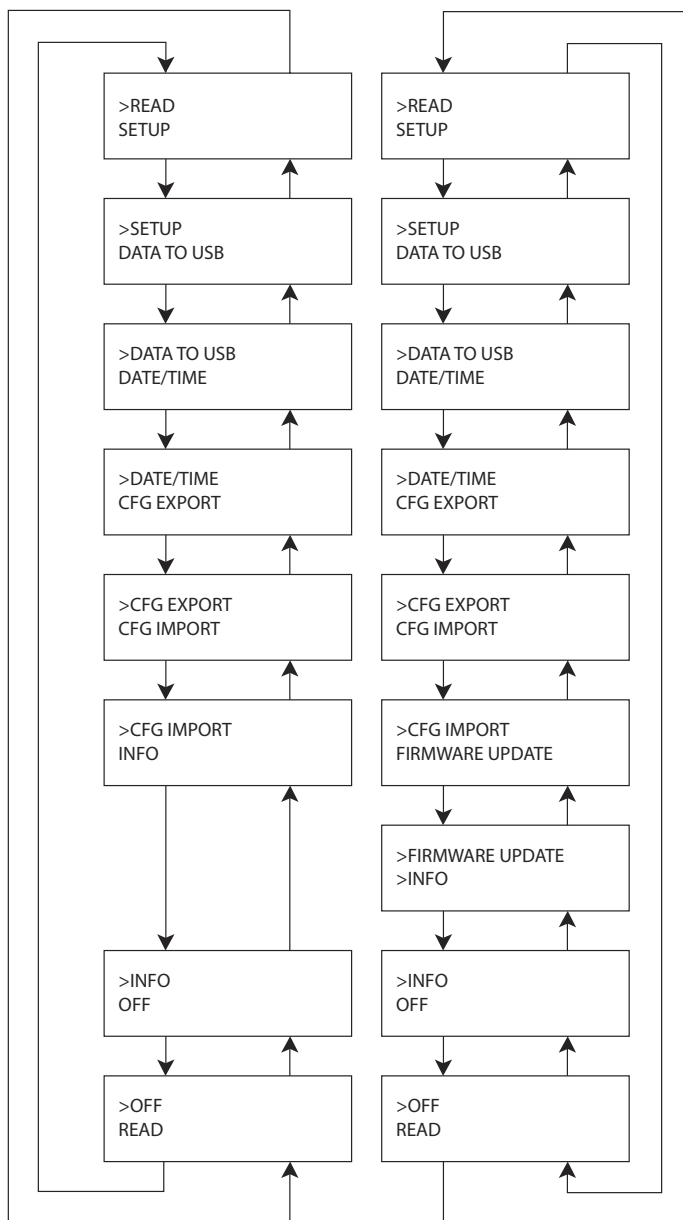
Catalogue code:

VW Piezometers	W9
VW Strain Gauges	ST1 - ST5
VW Pressure Cells	P6 & P9
VW Crackmeters	J2
VW Jointmeters	J1 & J3
VW Load Cells	L2

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Normal Mode Menu

Advanced Mode Menu



THE TECHNICAL RATING FOR THIS PRODUCT:

INTERMEDIATE



As the correct installation of any monitoring sensor or system is vital to maximise performance and accuracy, itsoil makes the following recommendations, for the skill level of the installation contractor.

ADDITIONAL SUPPORT

We offer installation and monitoring services to support this system. For more information please email : sales@soil.co.uk or call : **+44 (0) 1825 765044**

ADVANCED



The installer is trained and experienced in the installation of this type of instrument or systems, and is ideally a specialist Instrumentation and Monitoring contractor.

INTERMEDIATE



The installer already has previous experience and/or training in the installation of this instrument or system.

BASIC



As a minimum the installer has read and fully comprehends the manual, and if possible has observed these instruments or systems being installed by others.

Specifications

Vibrating Wire Inputs

Sweeping frequency	default 450-6000 Hz
Reading algorithm	Fast Fourier Transformation (FFT) based
Resolution	0.01Hz
Accuracy	0.01% of full scale
On-board excitation	5V and 15V square wave (user selectable)

Temperature Inputs

Temperature sensor	NTC 3K Ω
Measurement range	-50 to +150°C
Resolution	0.01°C
Accuracy	$\pm 0.1^\circ\text{C}$

Power

Power supply	nominal 6V DC, using a Nickel Metal Hydride (NiMH) rechargeable battery
Low battery voltage warning	4.1V
Current consumption	55mA on standby, 200mA while reading sensor at 5V
With backlight on	additional 8mA
Battery life	30 hours continuous without backlight, 15 hours with backlight
Auto-off timer	6 minutes of inactivity

Display

Display	16 x 2 character LCD display with backlight
Display unit	engineering units and raw units (Hz, Hz ² /1000 and period)
Other display function	reading quality indices (signal to noise ratio, signal strength, decay ratio and noise frequency)
User interface	6 key membrane keypad

Data Storage

Memory size	2 GB internal SD memory card (standard) – sufficient for 6 million sets of readings and several thousand individual sensor set ups
Interface	USB (host mode only)
Format of reading set	Time stamp, readings in raw and engineering units, sensor temperature, reading quality indices and VWnote information including ambient temperature and battery voltage
Method of data transfer	Via USB pen drive

Physical Properties

Size	L 190mm x W 140mm x D 40mm
Weight	0.95kg including bag
Operating temperature	-10 to +50°C

Ordering Information

VWnote

RO-1-VW-NOTE	VWnote – Vibrating Wire Handheld Recorder with Engineering Units using Fast Fourier Transformation (FFT) Reads VW instruments and thermistors and includes a manual, calibration certificate, Nickel Metal Hydride (NiMH) rechargeable battery, sensor flylead, carry case, USB pen drive and VWnote configuration software
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Flyleads

RO-1-VW-2.7	Terminal box flylead VW and temperature readout to terminal box RO-T
RO-1-VW-2.8	Cable plug flylead VW and temperature logger to cable plug CA-4.6

VWnote

MAN-230	VWnote User Manual
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